

from the United States, we shall approximate the coke costs of the most efficient plants abroad.⁶ In practice, because European producers are required to employ a certain amount of Common Market (ECSC) coal, their costs are slightly higher than this assumption would indicate. The difference in the cost of coke is based entirely on the differences in transportation costs and while the exact difference depends on the precise location of each plant with reference to its coal supply, we may take as a first approximation that the difference between U.S. and foreign producers is due to differences in ocean freight rates. In February 1967, based on information supplied by a major U.S. coal exporter, the freight rates on coal were:

	Freight per gross ton	
	40,000 ton vessels	80,000 ton vessels
Norfolk to Japan.....	\$5.50	¹ \$4.40
Norfolk to West European ports.....	3.5	2.80

¹ Estimated.

While these freight rates are extremely low levels and may be expected to rise, the greater use of super bulk carrier ocean vessels will tend to lower freight rates so that the average cost of transportation might remain relatively stable over the next five years in spite of higher average freight rates.

Japan now is in the process of switching over to Australian coal to supply its steel industry and intends to use little American coal after 1972. This should result in a substantial reduction of coal costs.

Both the American and foreign industry find imports of foreign iron ore competitive with the domestic ores, especially at plants located close to ports. The United States imported 36 per cent of its iron ore in 1966. It may be assumed for the purposes of this exercise that the cost of iron ore is approximately the same for all producers, although it is likely that Japan and Europe probably have slightly higher ore costs. Ore costs in practice, however, will vary widely within a country from plant to plant, depending on the location of the plant.

Both American and foreign producers imported almost all their manganese ore so there may assumed to be no differential in this respect.

These three materials, iron ore, coal and manganese ore, account for approximately 46 per cent of the cost of steelmaking materials in the U.S.⁷ It is assumed that with the remainder of the inputs such as steel scrap, electric power and other miscellaneous inputs, there is no differential although it is likely that on the balance, foreign costs are higher than those in the United States.

TRANSPORTATION COST DIFFERENTIALS

To bring the finished steel to U.S. markets involves further costs. The cost of transporting steel from Japan to U.S. Pacific Ports for most products actively imported in 1966, based on actual invoiced costs, was approximately between \$18.65 and \$22.33 and from Western Europe to East Coast Ports \$13.97-\$21.00,⁸ depending on the product.

In some instances, however, steel may be brought in on tramp steamers at less than \$12 a ton, although in 1966 only a small percentage of steel entered the U.S. on tramp steamers.⁹ However, Japanese and other foreign producers are organizing export cartels in order to make greater use of chartered vessels.

CAPITAL COST DIFFERENTIALS

The comparison of capital costs is one of the most difficult elements to estimate. In the period 1956-1966, the American steel industry invested \$14.9 billion and charged off \$9.6 billion in depreciation, depletion and amortization so that its net investment in this period was \$5.4 billion.⁹ At the same time steel capacity in-

⁶ U.S. Senate, Joint Economic Committee, "Steel Prices, Unit Costs, Profits and Foreign Competition," hearings, Washington, 1963, pp. 514-515. (Henceforth cited simply as "hearings").

⁷ Based on 1961 weights. *Hearings*, op. cit., p. 257. Material costs represent a considerably higher proportion of total costs of the foreign industry, *Steel Imports*, p. 447.

⁸ Cf. *Hearings*, op. cit., pp. 565-567 for complete ocean tariff data for earlier period.

⁹ Cf. *Hearings*, op. cit., p. 551. The information for 1966 is from private industry sources.

⁹ *Steel Imports*, p. 420.